

Figure 1: Correct attachment of tubing

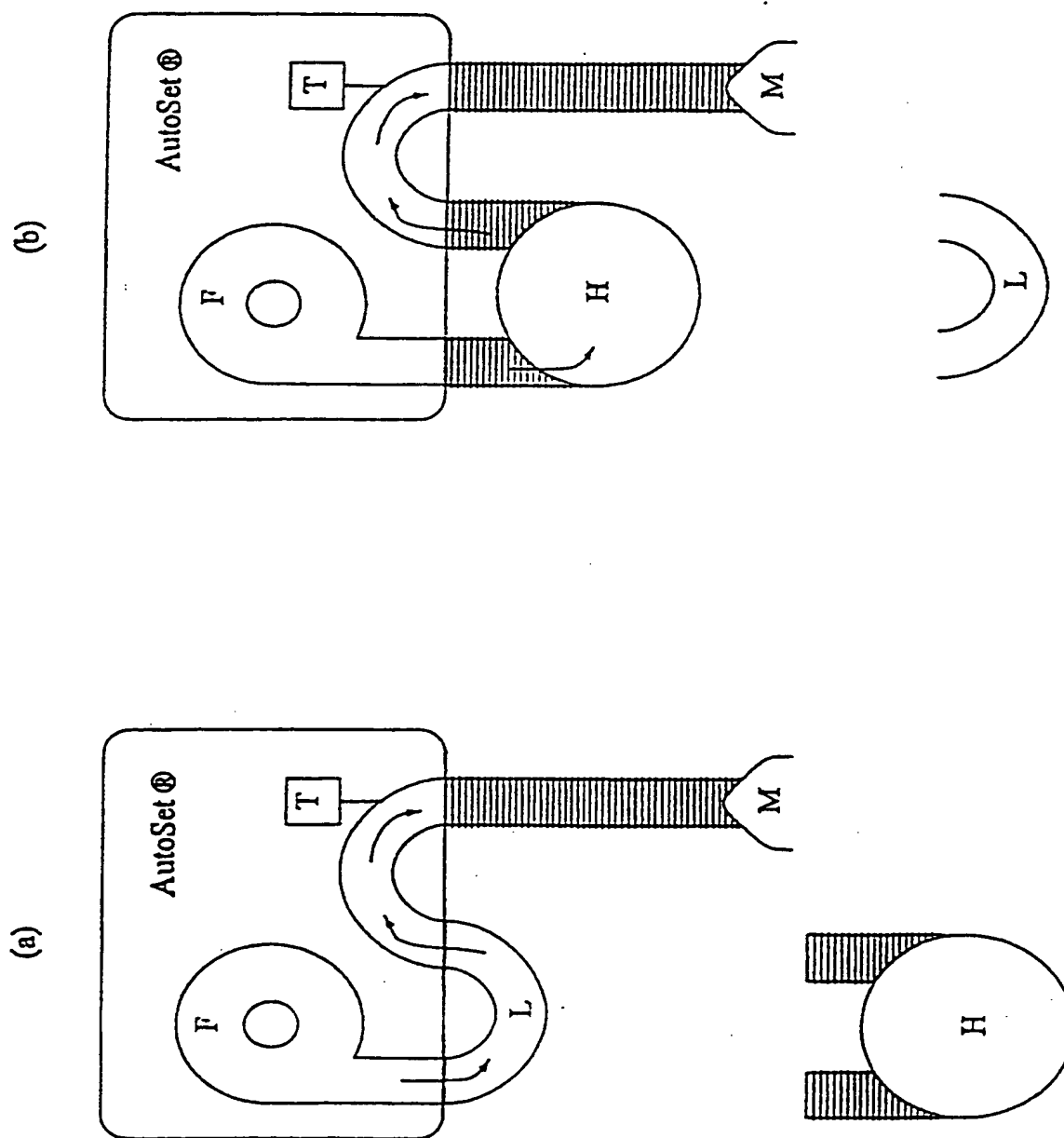
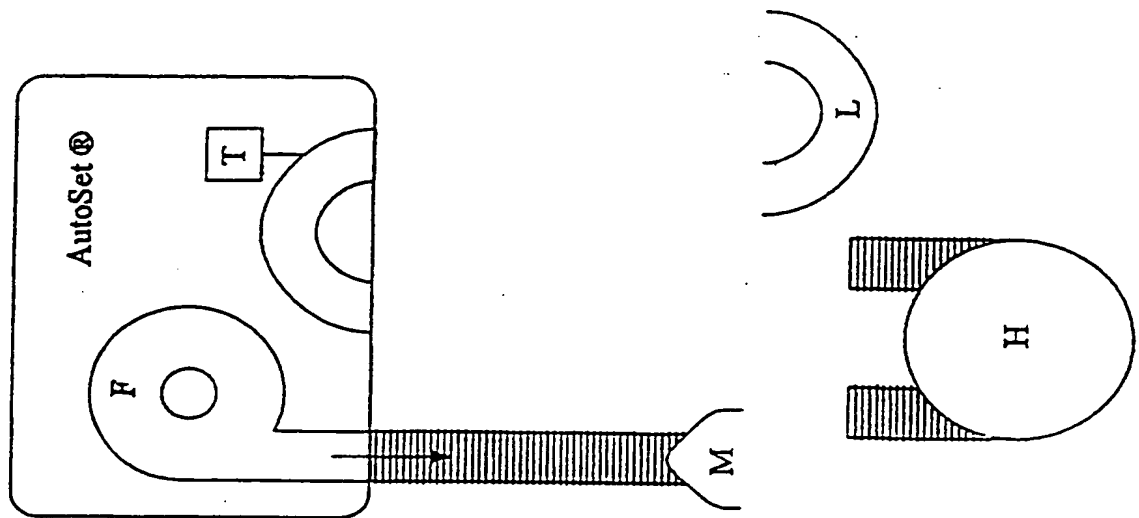
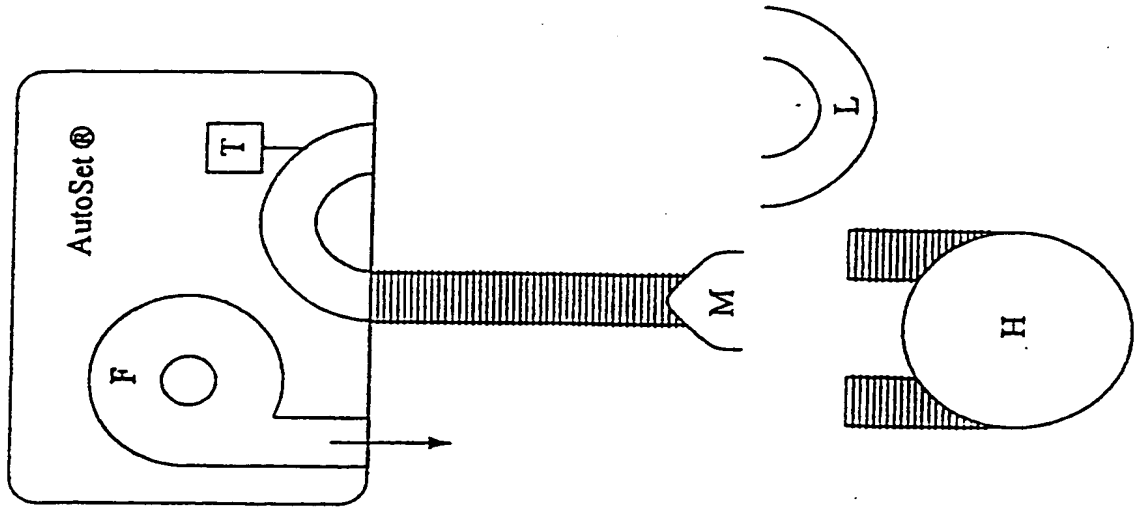


Figure 1: Incorrect attachment of tubing

(c)



(d)



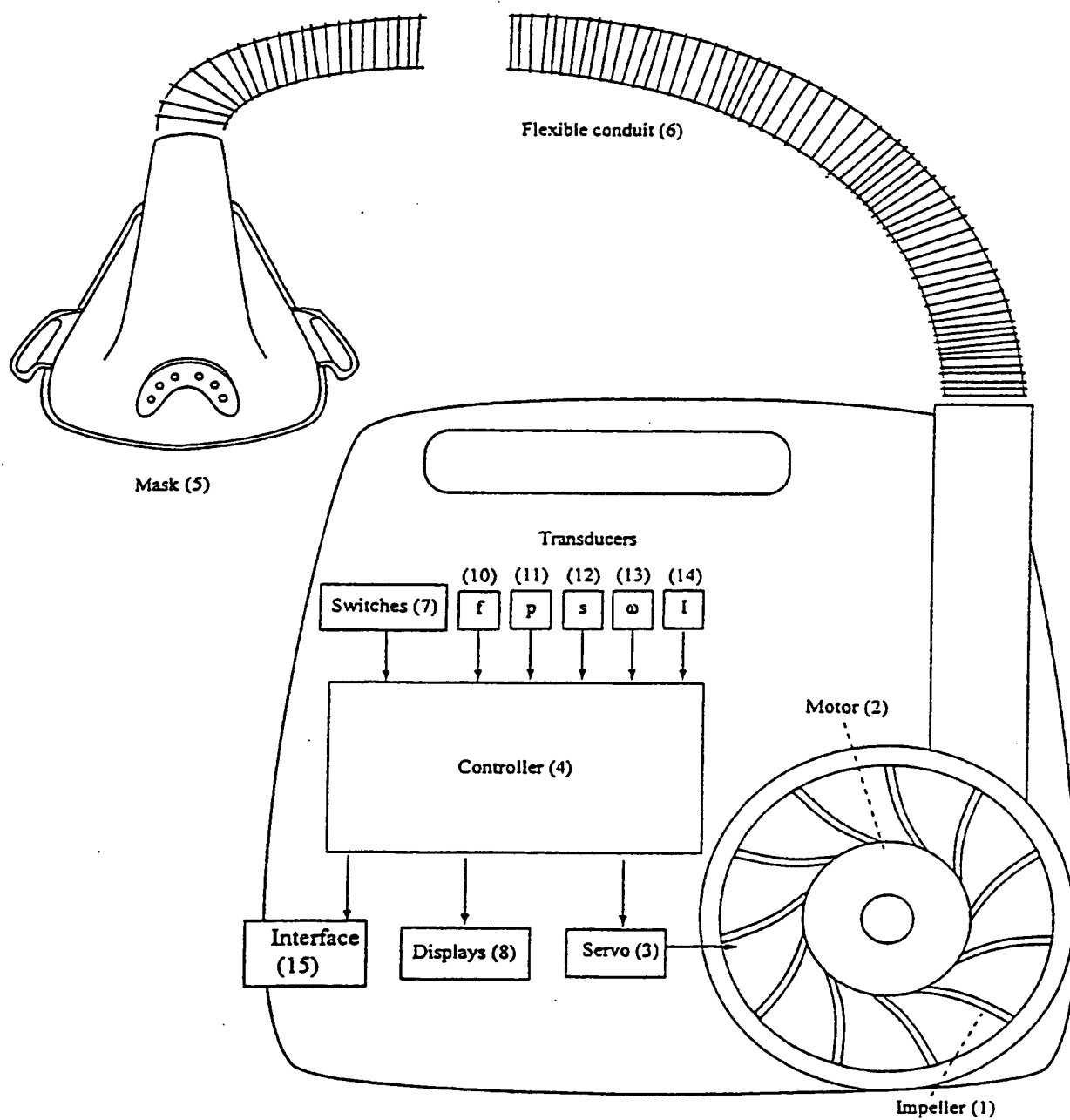


Figure 2: CPAP apparatus

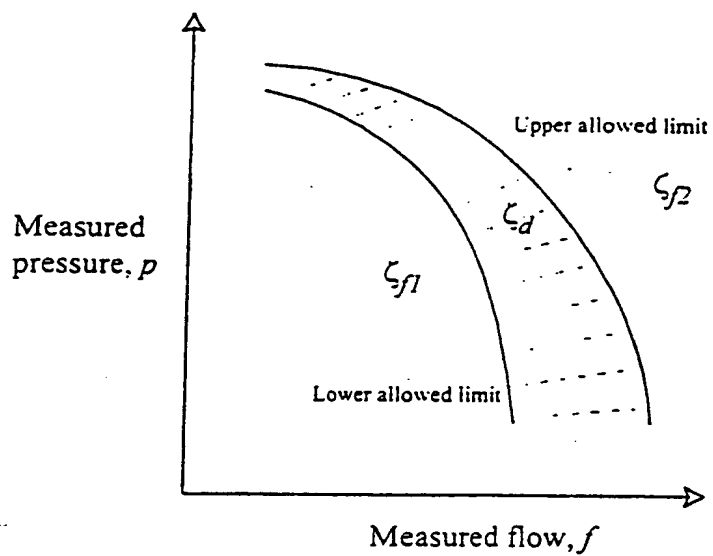


Figure 3a: High motor speed ( $\omega$ ) operation

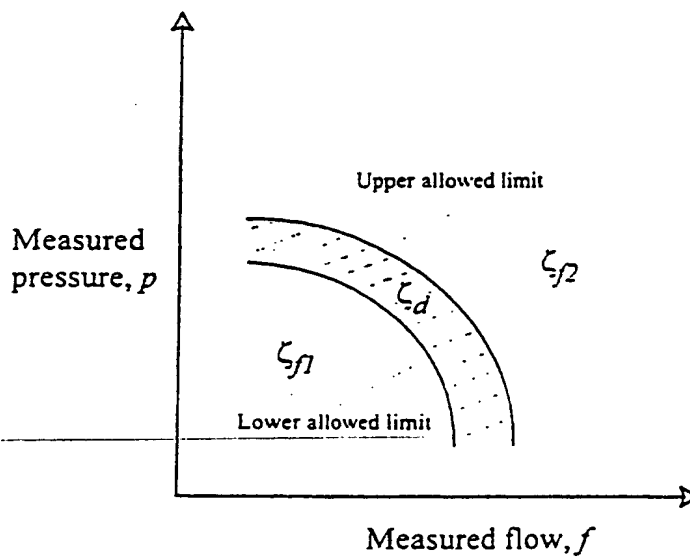


Figure 3b: Low speed motor speed ( $\omega$ ) operation

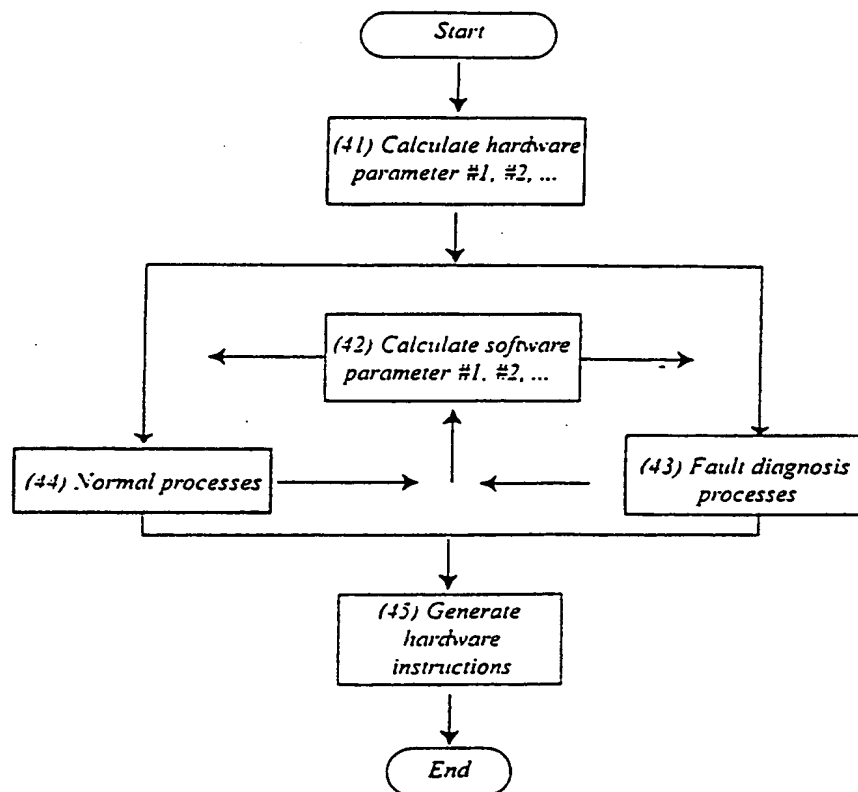


Figure 4: Fault diagnosis implemented in overall software processes

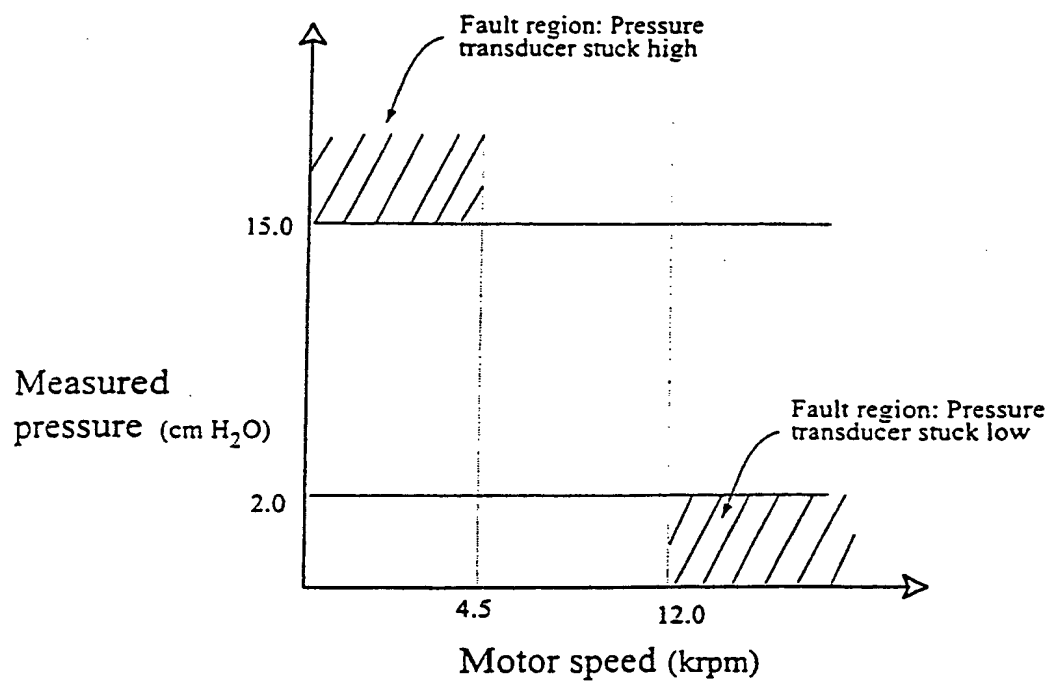
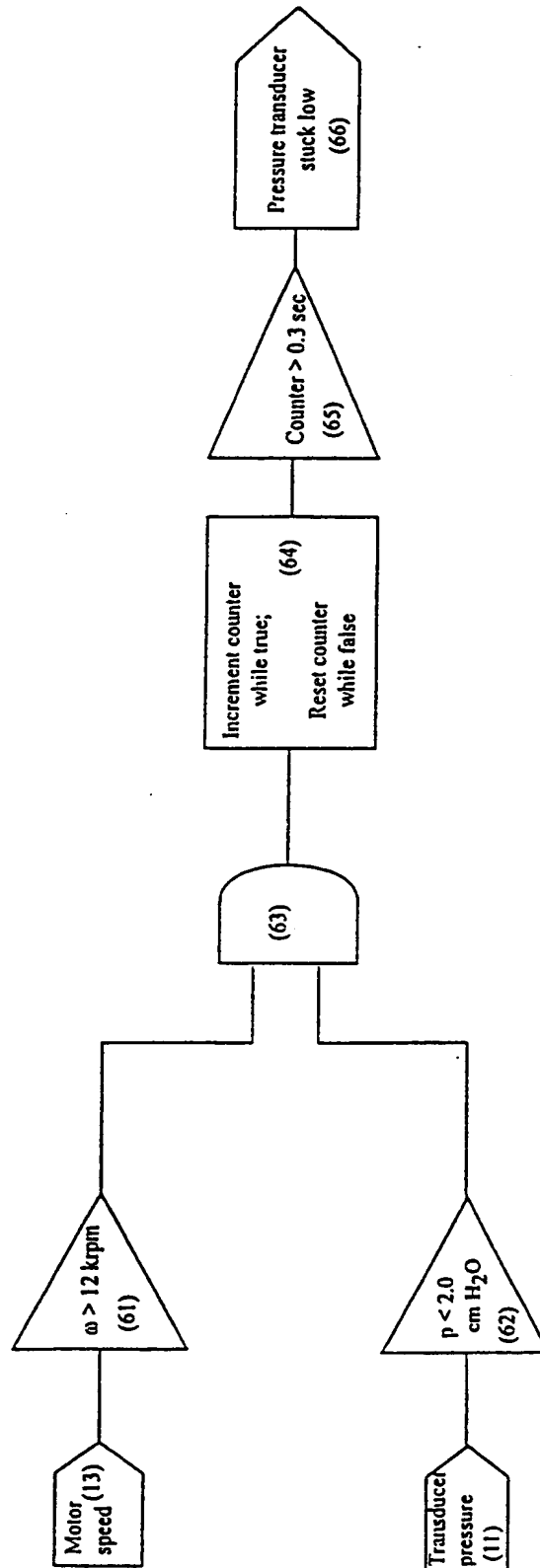


Figure 5: Pressure transducer fault regions



**Figure 6: Detect Pressure Transducer stuck Low**

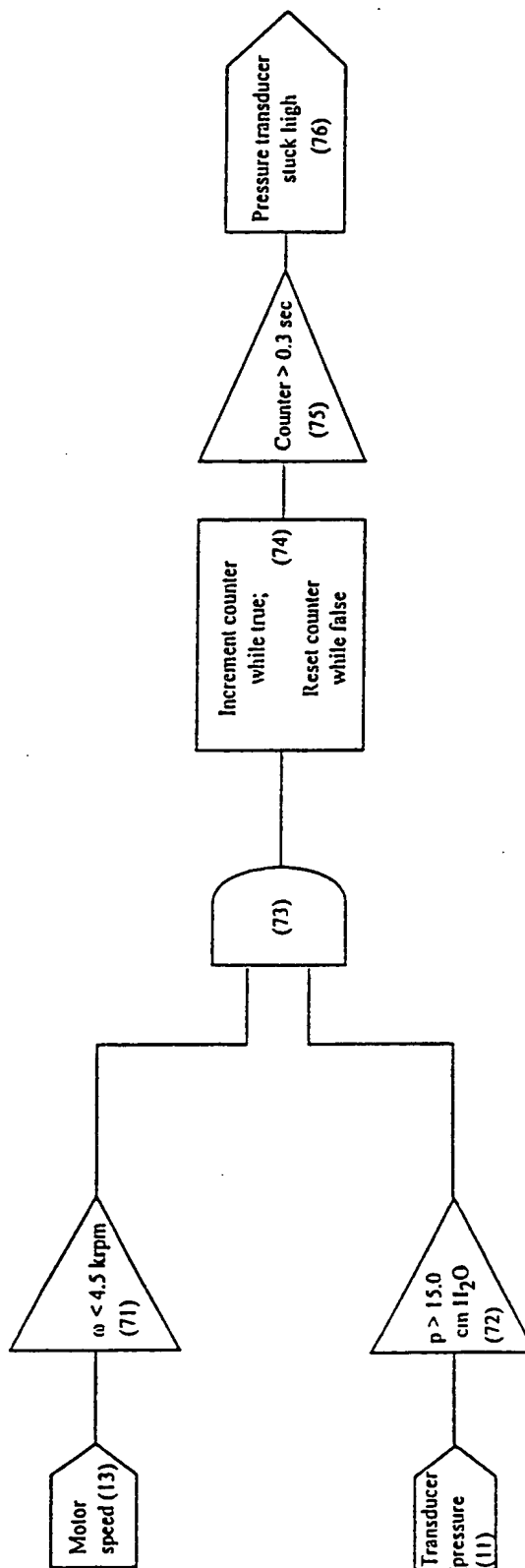


Figure 7: Detect Pressure Transducer stuck High



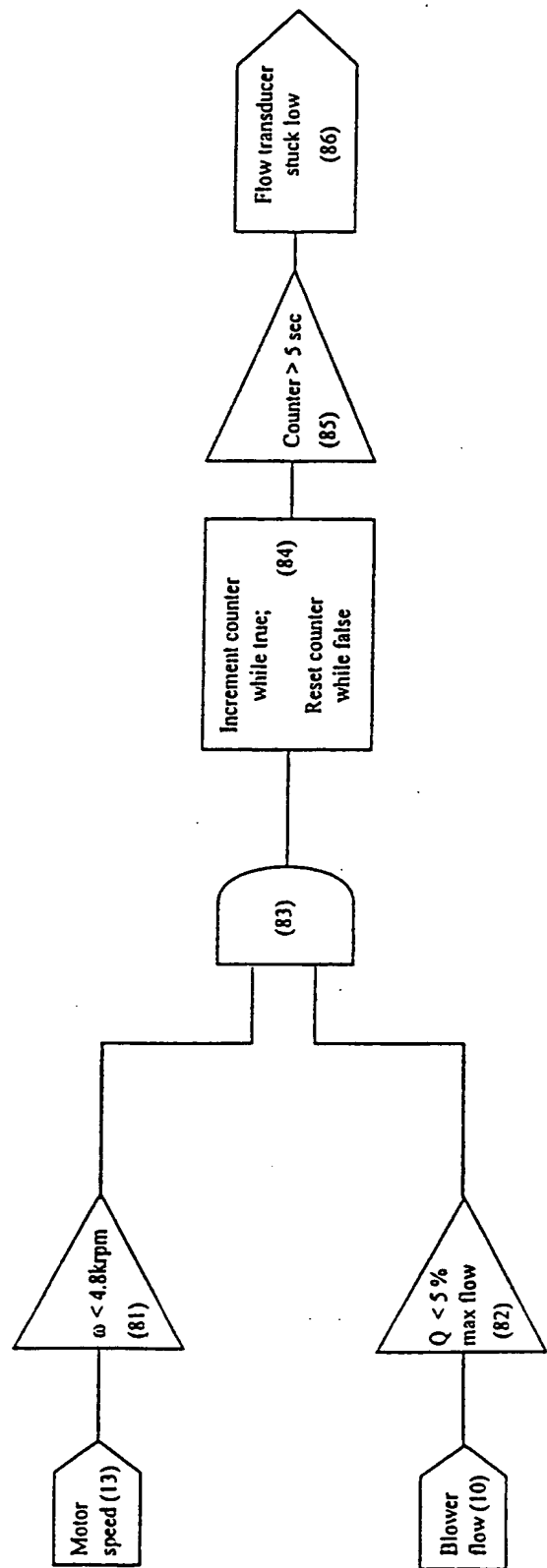


Figure 8: Detect Flow Transducer Stuck Low

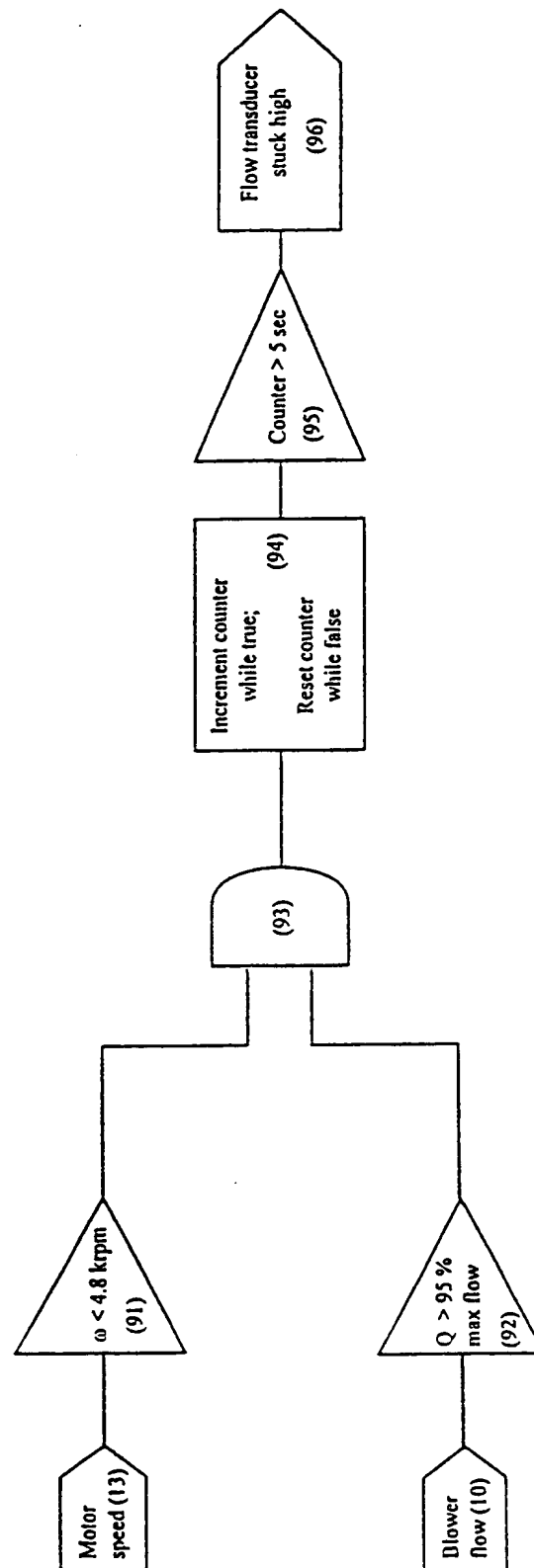


Figure 9: Detect Flow Transducer Stuck High

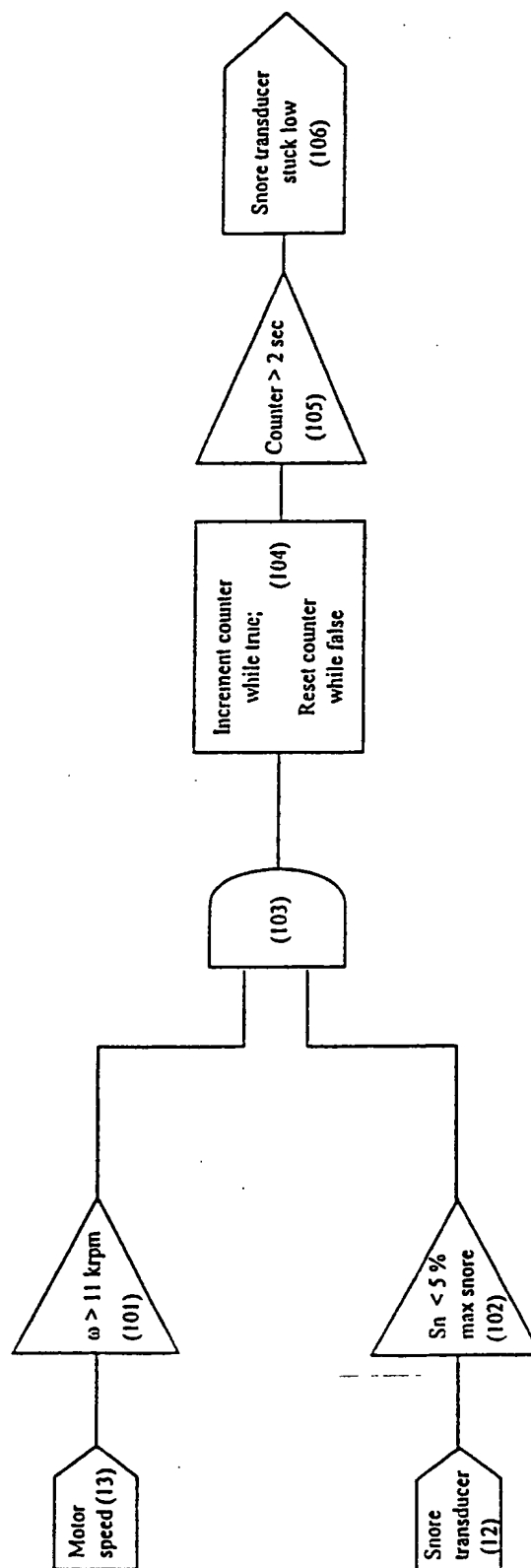


Figure 10: Detect Snore Transducer Stuck Low

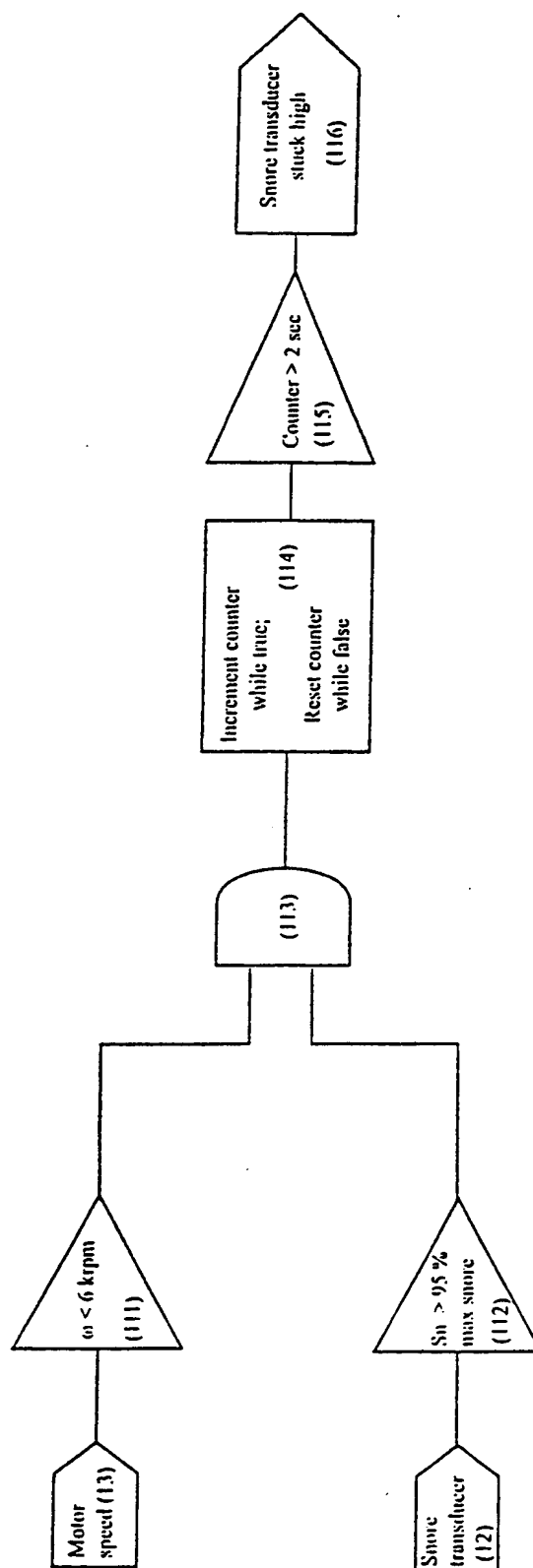
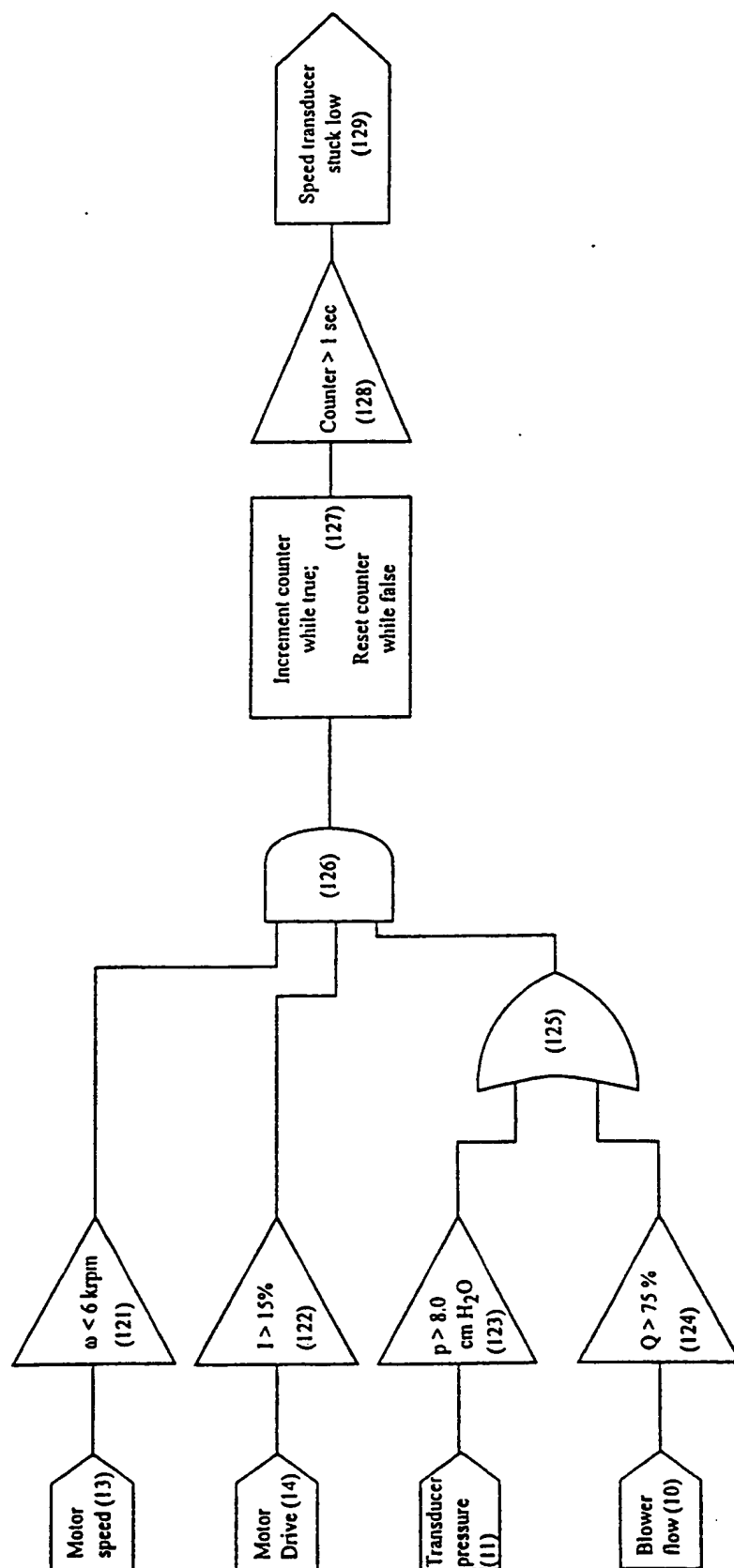


Figure 11: Detect Snore Transducer Stuck High

*Figure 12: Detect Speed Transducer Stuck Low*

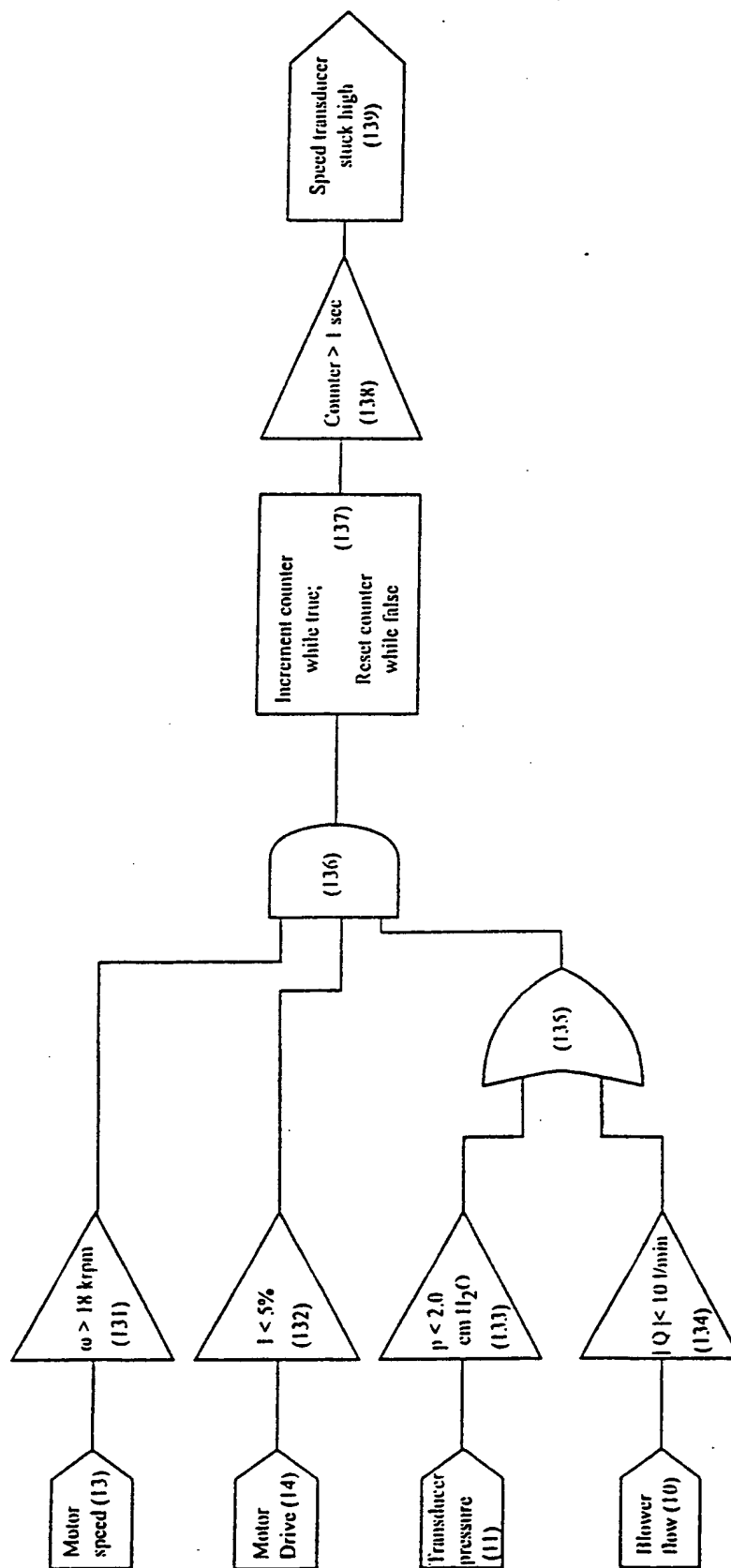
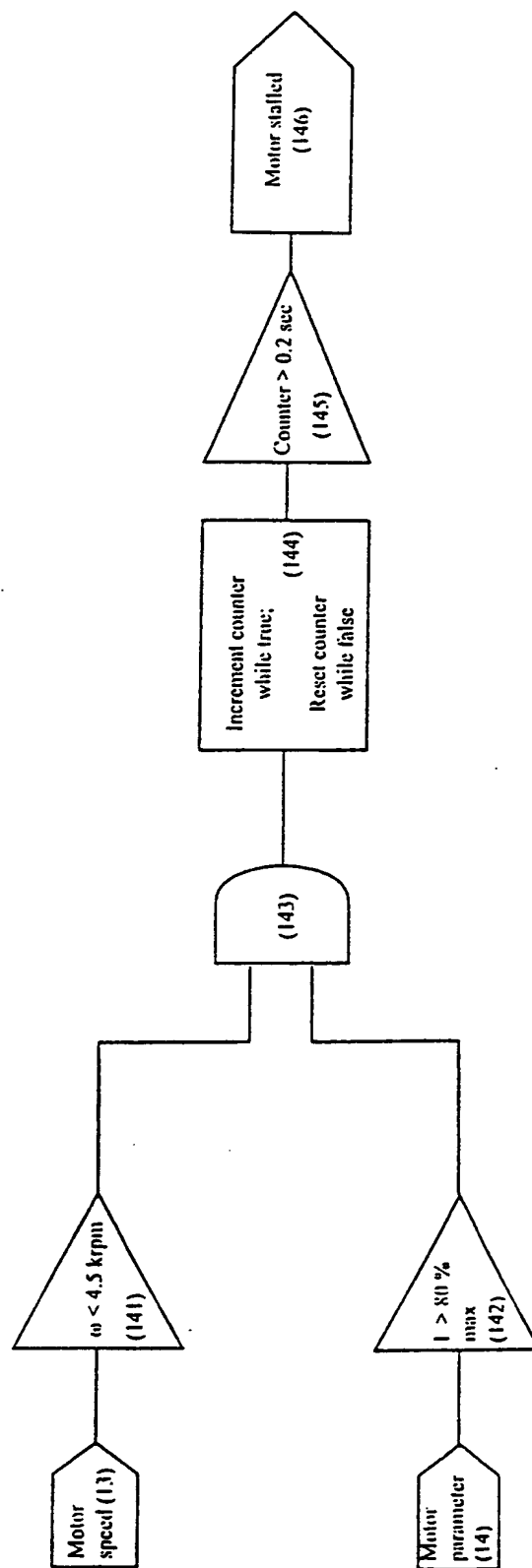


Figure 13: Detect Speed Transducer stuck High

*Figure 14: Detect Stalled Motor*

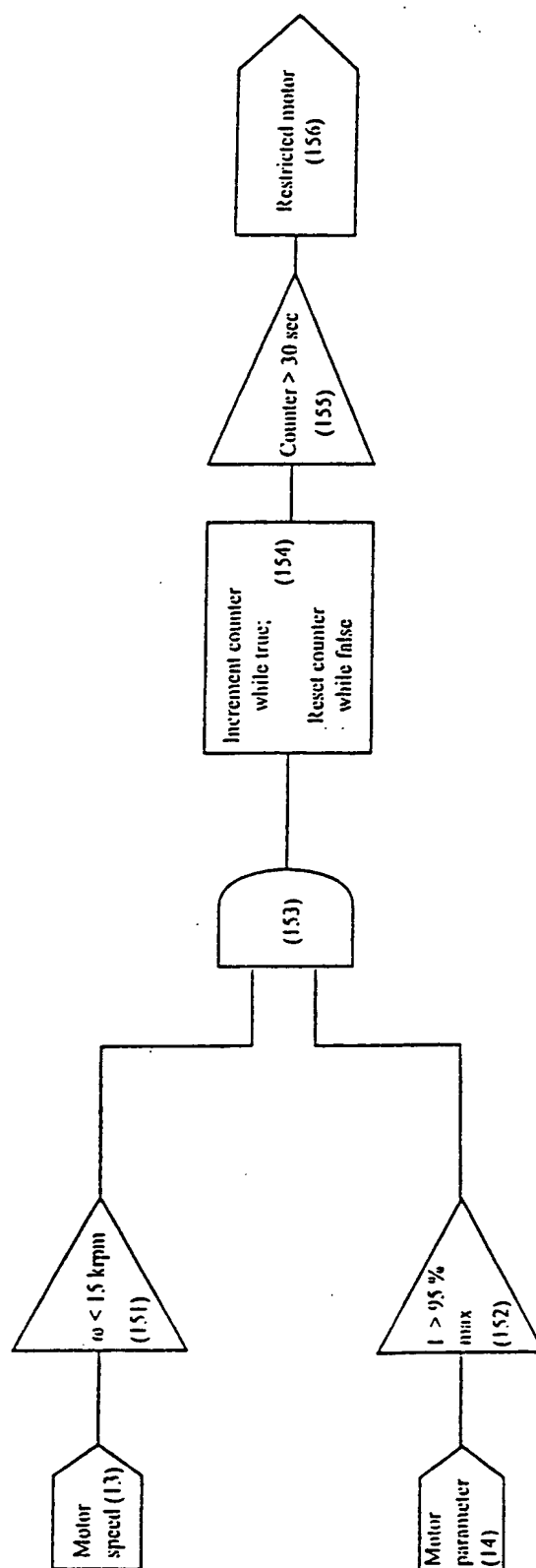
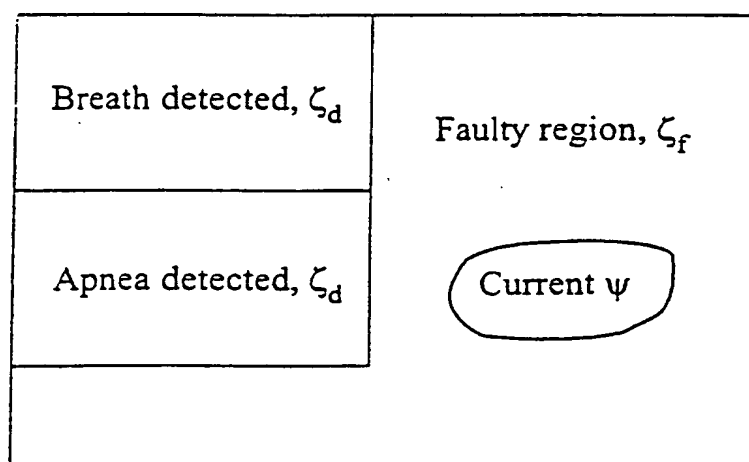


Figure 15: Detect Restricted Motor





*Figure 16: Software fault*

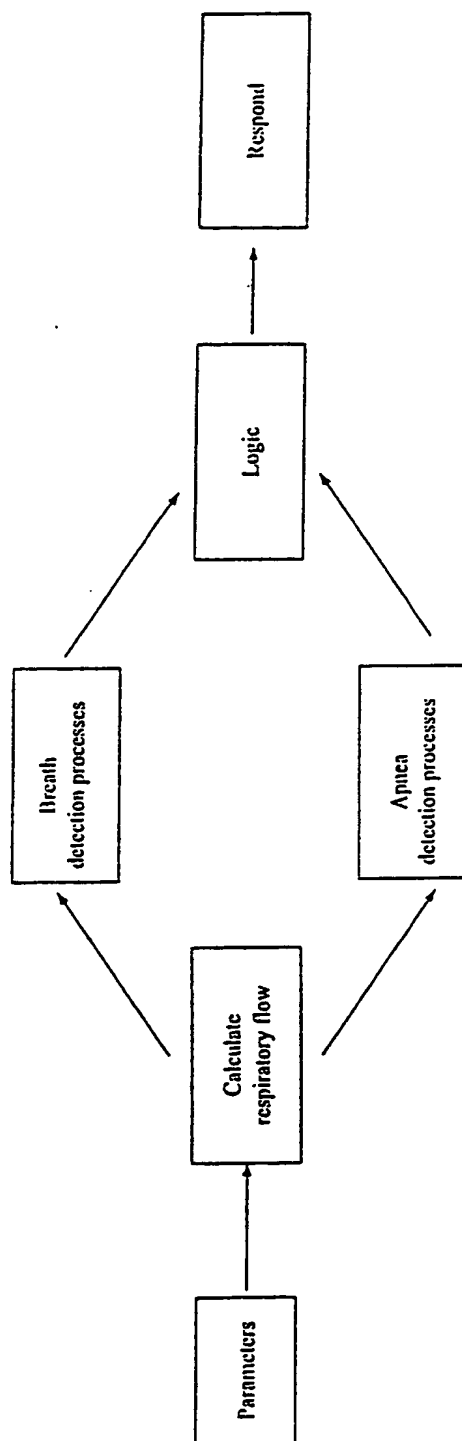


Figure 17: Software fault detection processes